With regard to hereditary transmission, exact information was obtained in 34 cases, in 27 of which heredity was denied. In two of the cases, the fathers were colour-blind in the same way as the subjects examined. The parents of another had normal vision; but a paternal uncle, two brothers, and the son of the person examined were colour-blind. In the parents and grandparents, and the son, of another person, the colour-sense was normal; but his brother and three maternal uncles had colour-blindness. In another case, the perception of colours was normal in the father, mother, brothers, and sisters; but the maternal grandfather, a maternal cousin (male), and the son of a female cousin on the mother's side, were the subjects of Daltonism. Another of the colour-blind persons had four relatives who were similarly affected; a maternal uncle and cousin, his mother's grandfather, and a brother. There was no instance of consanguineous marriage among Dr. de Fontenay's cases of colour-blindness.

The original paper contains a table of the 217 cases of colour-blindness, in which particulars are given as to the age, the colour of the eyes, the question of heredity, the result of examination with Holmgren's test, and also with other methods when employed, and the diagnosis. The author shows an extensive acquaintance with the literature of the subject; and quotes frequently, for the purpose of illustration and comparison, from the writings of Holmgren, Gladstone, Magnus, Cohn, Joy Jeffries, Wolfe, and others who have investigated it. He says that the increased attention paid to colour-blindness, within the last few years, has been attended in Denmark with some important results. All the *employés* of the public (State) and private railways have been examined, in order to ascertain their sense of colour (except in the case of one private company, which did not think such an examination necessary); and henceforth all candidates for situations on railways are to be tested as to their perception of colour. No law on the subject, however, has as yet been enacted; nor has any regulation been made with regard to the navy and mercantile marine, beyond obliging candidates for admission to the school of naval officers to submit to an examination.

Herr E. J. Mellberg, principal teacher of physics in the Lyceum at Helsingfors, has also examined the colour-sense of 227 pupils in that institution. Among them, he found ten cases of Daltonism, or 4.4 per cent.; four of red-blindness, one of green-blindness, two of violet-blindness, and three of incomplete colour-blindness. In addition, among the boys whose sense of colour is stated to be normal, there were three who confounded light yellowish-red with rose-colour; eighteen who could not distinguish between bluish-green and pure green; fourteen who failed in both these respects; and nine in whom the perception of colours was weak. The ages of the subjects varied from nine to twenty; and only one case of colour-blindness was met with in three above the age of seventeen.

The theory of Young and Helmholtz is regarded by Herr Mellberg as incapable of explaining, completely, either normal vision or colour-blindness. In his opinion, the eye possesses separate organs of perception—not only for three or four different colours, but for all the shades which can be distinguished; and colour-blindness, properly so-called, consists of incapability to receive the impression of a shade of colour, and is not necessarily connected with the impossibility of distinguishing between the impression received and the other colours of the spectrum.—*British Med. Journal*, April 30, 1881.

On the Diseases of the Ear in Locomotive Engineers and Firemen which may endanger the Travelling Public.

During the last few years Dr. Moos has been consulted for diseases of the ear by four locomotive engineers who had already resigned their posts for other reasons. These cases had this in common, that all four dated the origin of their deafness to the time when they still pursued their calling, that both ears were affected, and that the hearing was greatly diminished. Two of them suffered from constant subjective noises in both ears, one in one ear only, while the fourth heard no subjective noises at all. All four cases could be classified under the heading of *the sclerotic form* of catarrh of the middle ear. This fact led Professor Moos to turn particular attention to the subject in question, *especially as similar observations which he has since made in the case of locomotive engineers and firemen who were still on active duty had brought so vividly before him the danger which these affections might cause to the travelling public.*

After describing several cases which have come under his observation, as well as quoting the remarks of several authors who have drawn special attention to the danger to the travelling public from the affections of the ears of engine-drivers and stokers, he goes on to state that it is "now nearly thirty years since the French railroad surgeons began to pay more particular attention to the health of the employés," and that there is a defect in the German law with regard to the reporting of all cases of deafness to the superintendent of the line. It is not binding enough on the railway surgeons. Government or private railroad corporations should keep their own interests in view in the appointment of surgeons for these examinations. They would be acting for their own advantage in preferring one who has made a special study of ophthalmology and otology. The multiplicity of positions on railroads gives numerous chances for employing deaf men otherwise than in the positions in which their hearing became affected; but even a discharge from active duty on full pension amounts to nothing in comparison with the damages for goods and loss of life which depend on deafness for signals. Think also of the enormous sums often paid for damages in cases of accidents.

As regards the frequency of the deafness, Dr. Moos gives the expression of one engineer while undergoing repeated tests of his hearing: "If all of my fellow-engineers were tested as I have been, more than one-third of them would be found deficient in hearing." If affections of the ear in engineers and firemen are not so frequent as in others exposed to similar noxious influences, *e.g.*, hunters, foresters, machinists, etc.; if extensive statistics yield but a proportionally small percentage; and, further, if these diseases appear only *rarely and exceptionally* in these men, nevertheless, the exception is important enough for the aural surgeon, in conjunction with competent authorities, to give the subject full attention in the future; for even the exceptional cases might lead repeatedly to danger for those who travel by rail.

He sums up his paper with the following conclusions: I. Locomotive engineers and firemen are liable to affections of the ear with noticeable decrease in hearing, usually in both ears, which may be attributed to their employment; these affections may, perhaps, appear earlier in those who are employed on railroads running through mountainous regions than in those on roads in level countries. II. This acquired deafness appears to be more dangerous than colour-blindness as regards the signal code, because the latter is a *congenital* defect, which can be defined precisely before the individuals are put on active duty, while the deafness is an *acquired* disease, slow in its approach, and often unknown to the person affected, until an accident, *e.g.*, a cold or injury, diminishes the hearing more and more on one or both sides, or destroys it completely. III. The percentage of these affections of the ears can only be fixed by extensive statistics and examinations. The fact of its existence is evident; and even if the percentage were but slight, it is of great importance, for even a single exception may cause danger. IV. The ears should be examined very carefully before a certificate of fitness for duty is given; the examination can and should only be undertaken by a physician who has made a special study of otology, or at least understands how to examine the ear and to test its functions accurately. V. When a man has acted as fireman for a long time, his promotion to the position of engineer should demand especial precautions in this respect. VI. When his definite appointment has been made, he should be warned that his occupation *may* injure his hearing, and that he should present himself for examination when he notices the slightest defect in this respect. VII. The physician should be sworn to report every case of deafness in firemen or engineers to the superintendent of the road. VIII. The hearing of engineers and firemen should be tested at least once in every two years, so as to avoid all possible danger; perhaps oftener in those who run on tunnelled roads.—*Edinburgh Med. Journal*, May, 1881, from *Zeitschrift für Ohrenheilkunde*, vol. ix. No. 4, p. 370.

MIDWIFERY AND GYNÆCOLOGY.

Gastrotomy in Extra-Uterine Pregnancy.

The propriety of opening the abdomen and removing the fœtus in cases of extra-uterine pregnancy is one of those questions which recent advances in abdominal surgery make it necessary to reconsider. The examination and comparison of cases recorded before the introduction of antiseptic precautions, led those who had most carefully considered the matter to the opinion that it was best to refrain from interference until the sac had suppurated and become adherent to the abdominal parietes; that abdominal section before this time brought with it a greater chance of harm than of good. Since then, many writers and speakers have urged—pointing to ovariotomy as an illustration—that the abdomen ought to be opened early; that with practice, and antiseptic precautions, the results would be quite different from what they have been.

This question has been carefully considered in an able article by Professor **Litzmann**, of Kiel.[1] He objects to the earlier statistical tables, on the ground that the cases included in them have not been sifted with sufficient care. His own opinions are based on a collection of forty-three cases, every one of which is recorded in full detail. In ten of these the operation was performed before the death of the child. In favour of operating before the child dies, there are two reasons commonly given—first, that the mother will probably be in fair general health; second, that there is a chance of safety for the infant.

Too much importance must not be attached to the former consideration, because few women go to the end of an extra-uterine pregnancy without some disturbance of health—*e. g.*, slight local peritonitis, hemorrhages, etc. The great source of danger in operating at this time lies in the fact that the placental circulation is still being carried on. Attempts to separate and remove the placenta at the time of operation end in disaster, even if the attempt itself be successful. And if the opening of the sac and extraction of the fœtus be accomplished without disturbance of the placenta, and this be left to spontaneously come away, there is still much risk, for this process is always one of molecular disintegration and sloughing, and is often attended with severe hemorrhage. And the prospect of saving the child is not so very hopeful as it might at first seem; because in extra-uterine pregnancy the child is often imperfectly developed. Out of the ten cases collected, five of the children died within twenty-four hours.

In considering the question of gastrotomy after the death of the child, it is necessary first to study the processes which attend and follow this event. After the death of the child, the liquor amnii begins to be re-absorbed; it also becomes

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[1] Archiv für Gynäkologie.